

would be completely unprotected. For this reason a presorting according to the second aspect of the present invention is carried out for short windows. In the case of the AAC standard the grouping and the scale factor band approach are abandoned. A new presorting is performed, this time in units of spectral lines.

In a preferred embodiment of the present invention each unit contains 4 spectral lines. In the AAC standard each window therefore contains 32 units, corresponding to 128 spectral lines. The spectral data are arranged as follows:

1st window, 1st unit
 2nd window, 1st unit
 ...
 8th window, 1st unit
 1st window, 2nd unit
 2nd window, 2nd unit
 ...
 8th window, 2nd unit
 1st window, 3rd unit
 ...

This presorting ensures that the individual spectral regions of all the windows lie near one another, i.e. that low spectral values are written according to frequency from the individual sets of spectral values into the front area of the sort table before the spectral values with higher frequency. If the spectral values in the lower spectral region are particularly important psychoacoustically, the cited presorting in the sort table provides the basis for inserting the spectral values from the sort table into the raster. With this presorting of the code words, i.e. determining the priority code words, there is no need to transmit any additional information since the decoder knows from the side information that short windows

were used in this block or frame and the sort algorithm in the coder for generating the units is always fixed and is thus permanently programmed in the decoder.

It is important to note that the presorting of code words into a sort table corresponds to determining the priority code words since this table in itself determines which code words can, with a high degree of probability, be written to raster points since the code words which can, with a high degree of probability, be positioned on raster points, i.e. the priority code words, are those code words at the beginning, i.e. at the front or upper region, of the sort table.

Other than in the preferred embodiment this presorting is not performed by means of a sort table but by indexing the individual code words so as to specify the sequence in which the indexed code words are to be written into the bit stream.

From the AAC standard it is known that some code tables are two dimensional or four dimensional, i.e. that a code word codes two or four spectral values. It is therefore advantageous to group four spectral lines or a multiple thereof into a unit, since in this way code words which code the same frequency region can be sorted in direct succession to one another. The number of spectral lines from a unit is thus preferably divisible by the different dimensions of the code tables, i.e. the number of lines per unit must be a common multiple of the number of lines per code word and optimally the lowest common multiple.

The present invention becomes particularly efficient when the first and second aspects are combined. If resorting into units according to the present invention has been performed for short windows, this can be followed by priority code word determination by means of the code table indicator in which the

result of unit resorting is resorted again to ensure that the code words from higher code tables become priority code words which are positioned on fixed raster points so as to achieve a high degree of error security. This combination is not absolutely necessary, but it leads to the best results.

09869401.090501
T05060 T0469860